

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Application of:	)	
	)	Confirmation No: 3808
Marc Lamberton, <i>et al.</i>	)	
	)	Group Art Unit: 2614
Serial No.: 10/817,575	)	
	)	Examiner: Nguyen, Khai N.
Filed: April 2, 2004	)	
	)	
For: Methods and Apparatus for Controlling	)	Atty. Docket No.: 200208994-2
Processing Entities, Such as	)	
Distributed Signalling Gateways	)	

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

Mail Stop: Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

This Appeal Brief under 37 C.F.R. § 41.37 is submitted in support of the Notice of Appeal filed November 18, 2008, responding to the final Office Action mailed August 18, 2008.

It is not believed that extensions of time or fees are required to consider this Appeal Brief. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. §1.136(a), and any fees required therefor are hereby authorized to be charged to Deposit Account No. 08-2025.

### **I. Real Party in Interest**

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

### **II. Related Appeals and Interferences**

There are no known related appeals or interferences that will affect or be affected by a decision in this Appeal.

### **III. Status of Claims**

Claims 1-29 stand finally rejected. The final rejections of claims 1-29 are appealed.

### **IV. Status of Amendments**

No claim amendments have been made subsequent to the final Office Action mailed August 18, 2008. The claims in the attached Claims Appendix (see below) reflect the present state of Applicants' claims.

## **V. Summary of Claimed Subject Matter**

The claimed inventions are summarized below with reference numerals and references to the written description ("specification") and drawings. The subject matter described in the following appears in the original disclosure at least where indicated, and may further appear in other places within the original disclosure.

Embodiments according to independent claim 1 describe a method of controlling a local process (Applicants' specification, page 9, lines 6-8; Fig. 2, 22-1, 22-2) that forms part of a first processing entity (Applicants' specification, page 9, lines 4-8; Fig. 2, 22), where the first processing entity (Applicants' specification, page 9, lines 4-8; Fig. 2, 22) maintains a plurality of associations (Applicants' specification, page 9, lines 18-22) with a plurality of remote processes (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) in a second processing entity (Applicants' specification, page 9, lines 15-16; Fig. 2, 30, 32). Such a method comprises receiving a failure message from a remote process (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) indicating a fault affecting an association (Applicants' specification, page 9, lines 18-22) linking the local process (Applicants' specification, page 9, lines 6-8; Fig. 2, 22-1, 22-2) with that remote process (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) and queuing data messages destined for that remote process (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28). Applicants' specification, page 13, lines 30-32. The method further comprises controlling the transmission of an acknowledgement of the failure message so that data messages pending on the association (Applicants' specification, page 9, lines 18-22) are received at that remote process (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) before the acknowledgment of the failure message, (Applicants'

specification, page 14, lines 9-13, and initiating a traffic diversion to set up an alternate path between the first processing entity (Applicants' specification, page 9, lines 4-8; Fig. 2, 22) and the second processing entity (Applicants' specification, page 9, lines 15-16; Fig. 2, 30, 32) for queued data messages. Applicants' specification, page 12, lines 20-25.

Embodiments according to independent claim 22 describe a method of recovering failure in a distributed signalling gateway (Applicants' specification, page 9, lines 4-8; Fig. 2, 22) maintaining a plurality of associations (Applicants' specification, page 9, lines 18-22) between signalling gateway processes (Applicants' specification, page 9, lines 6-8; Fig. 2, 22-1, 22-2) of the distributed signalling gateway (Applicants' specification, page 9, lines 4-8; Fig. 2, 22) and application server processes (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) of an application server (Applicants' specification, page 9, lines 15-16; Fig. 2, 30, 32). Such a method comprises initiating a traffic diversion in response to a failure message to set up an alternate path between the signalling gateway processes (Applicants' specification, page 9, lines 6-8; Fig. 2, 22-1, 22-2) and the application server processes (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) in case of fault affecting an association Applicants' specification, page 9, lines 18-22). Applicants' specification, page 12, lines 1-8. The method further comprises initiating a switch back to include a new association (Applicants' specification, page 9, lines 18-22) linking a signalling gateway process (Applicants' specification, page 9, lines 6-8; Fig. 2, 22-1, 22-2) and an application server process (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28), Applicants' specification, page 9, lines 6-10, and according to the change of status of any

association (Applicants' specification, page 9, lines 18-22), updating routing tables capable of routing data messages received by the signalling gateway processes (Applicants' specification, page 9, lines 6-8; Fig. 2, 22-1, 22-2) to its destined application server processes (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28). Applicants' specification, page 15, lines 10-21. The method also comprises distributing sequentially messages from the signalling gateway (Applicants' specification, page 9, lines 4-8; Fig. 2, 22) to the plurality of application server processes (Applicants' specification, page 9, lines 15-18; Fig. 2, 26, 28) according to the routing tables. Applicants' specification, page 19, lines 3-5.

#### **VI. Grounds of Rejection to be Reviewed on Appeal**

The following grounds of rejections are to be reviewed on appeal:

Claim 20 has been rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

Claims 20-21 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Claims 1-29 have been rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter.

Claims 1-8 and 16-21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* (U.S. Patent Publication No. 2002/0186687 A1) in view of *Sun* (U.S. Patent Publication No. 2002/0188650 A1).

Claims 9-12 and 14-15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* in view of *Sun* in further view of *Performance Technologies* ("Tutorial: Interworking Switched Circuit and Voice-over-IP Networks," August 22, 2001).

Claims 13 and 22-29 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* in view of *Sun* in further view of *Performance Technologies* in further view of *Suzuki* (U.S. Patent Publication No. 2002/0156925 A1).

## **VII. Arguments**

### **A. Rejection of Claim 20 under 35 U.S.C. § 112**

Claim 20 has been rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. The final Office Action issued August 18, 2008 asserts that the language "readable storage medium embedded with computer code" is not described in applicant's original specification and therefore is new matter.

In response, Applicants note that the "[t]here is no requirement that the words in the claim must match those used in the specification disclosure." MPEP 2173.05. Accordingly, Applicants respectfully submit that the specification clearly supports a "computer readable medium," as recited in dependent claim 20. As an example, the application describes a computer running software which necessarily involves a medium for storing the software. See pages 8-9, lines 31-2. For at least these reasons, claim 20 complies with 35 U.S.C. § 112, first paragraph and the rejection is improper. Applicants respectfully request that the rejection be reversed.

Claims 20-21 have also been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The final Office Action issued August 18, 2008 states that the respective claims are unclear as to what is being claimed.

In response, Applicants note that claim 20 recites a "computer readable storage medium embedded with computer code for controlling a local process using a method as claimed in claim 1." Therefore, claim 20 claims a computer readable storage medium. According to the language of claim 20, this computer readable storage medium has computer code that implements the method described in claim 1.

Regarding claim 21, it recites a "signalling gateway comprising a plurality of local processes that are controlled using a computer program code as claimed in claim 20." Therefore, claim 21 claims a signalling gateway. In accordance with the language of claim 21, the signaling gateway uses computer program code, as described in claim 20.

Accordingly, Applicants respectfully submit that claims 20-21 are clear and definite and in compliance 35 U.S.C. § 112, second paragraph. Applicants respectfully submit that the rejection is improper and request that the rejection be overturned.

**B. Rejection of Claims 1-29 under 35 U.S.C. § 101**

Claims 1-29 have been rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter.

Regarding claims 20-21, the final Office Action issued August 18, 2008 states that claim 20 recites a "computer readable storage medium embedded with a computer code" and asserts that "it cannot be concluded that 'a computer readable medium embedded

with computer code' is executable by a computer; as a result the medium is just code or instructions and therefore fails to fall within a statutory category of § 101." See pages 3-4.

In response, Applicants submit that one of ordinary skill in the art would conclude that a computer readable storage medium embedded with computer code for controlling a local process entails that the code is executable by a computer. Further, computer code does not equate to a computer readable storage medium. Diversely, the claimed subject matter describes a computer readable storage medium which is not just code or instructions and is not claimed as descriptive material per se. Rather, claim 20 is an article of manufacture (computer readable storage medium) that causes a computer to control a local process using a described process. Similarly, claim 21 describes a machine (signaling gateway) that is controlled using the computer program code described in claim 20. Since articles of manufactures and machines are recognized as statutory categories of § 101, the rejections of claims 20-21 are improper and should be overturned.

Claims 1-29 are also rejected under 35 U.S.C. § 101 because the Examiner has interpreted these methods claims to be software claims. The Examiner reasons that since the specification arguably states that the claimed method(s) can be performed by computer program code, the claimed method(s) can be construed as software claims.

In response, the fact that a claimed method may be implemented using a computer executing software does not mean that the claimed method is to be characterized as software or a computer or any other form capable of performing the claimed method. Further, it is noted that independent claim 1 is tied to a particular machine (e.g., first processing entity) and independent claim 22 is tied to a particular machine (e.g., signaling gateway and application server) which is one of the requisites for statutory method claims



according to the Federal Circuit. See *In re Bilski*, — F.3d —, 88 U.S.P.Q.2d 1385 (2008). Accordingly, it is improper to construe claims 1-29 to be mere software claims. Applicants respectfully submit that claims 1-29 comply with § 101 and the rejection of the claims should be overturned.

**C. Rejection of Claims 1-8 and 16-21 under 35 U.S.C. § 103**

Claims 1-8 and 16-21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* (U.S. Patent Publication No. 2002/0186687 A1) in view of *Sun* (U.S. Patent Publication No. 2002/0188650 A1). Applicants respectfully traverse this rejection for at least the following reasons.

As provided in independent claim 1, Applicants claim:

A method of controlling a local process that forms part of a first processing entity, said first processing entity maintaining a plurality of associations with a plurality of remote processes in a second processing entity, said method comprising the steps of:

- receiving a failure message from a remote process indicating a fault affecting an association linking the local process with that remote process;
- queuing data messages destined for that remote process;
- **controlling the transmission of an acknowledgement of the failure message so that data messages pending on the association are received at that remote process before the acknowledgment of the failure message; and**
- **initiating a traffic diversion to set up an alternate path between said first processing entity and said second processing entity for queued data messages.**

(Emphasis added).

Applicants respectfully submit that independent claim 1 is allowable for at least the reason that *Roque* in view of *Sun* does not disclose, teach, or suggest at least "controlling the transmission of an acknowledgement of the failure message so that data

messages pending on the association are received at that remote process before the acknowledgment of the failure message" and "initiating a traffic diversion to set up an alternate path between said first processing entity and said second processing entity for queued data messages," as emphasized above.

For example, *Roque* describes a process for an application server process (ASP) to manage a withdrawal of service by a signalling gateway process (SGP). In this process, an SGP may send a "set of messages that will convey SGP state maintenance and SGP traffic maintenance events . . . related to an SGP . . . to an ASP." Para. 0201. The ASP may also send notifications related to a status of a Signalling Gateway (SG) (including SGPs for the SG) to the SGPs that serve the SG. See para. 0218. Accordingly, *Roque* discloses the conveying of a status of an SGP, such as whether an SGP is down or inactive. For example, *Roque* states:

[0385] When an ASP (e.g.: ASP-X) receives an SGPIA or an SGPDOWN message from an SGP (e.g.: SGP-A), first, if its status was "SGP\_ACTIVE" it has to stop traffic (signaling traffic messages) towards such SGP and do not expect receive any traffic (signaling traffic messages) coming from such SGP.

[0386] Then, after updating the status for the sending SGP and updating, if proceeds, the status of the affected SG(s), the receiving ASP will have to fetch in the storing means (64) an alternative SGP (e.g.: SGP-C) that is currently serving, or can serve, the SG(s) that became unattended by the sending SGP (SGP-A).

[0387] If such alternative SGP is found and its status is "SGP\_ACTIVE", then such SGP shall, from now, be used for signaling traffic messages related to such affected SG(s).

[0388] Otherwise, the sending of signaling traffic messages related to the affected SG(s) is temporarily stopped until the receiving ASP (ASP-X) starts and complete an activation procedure towards one (or more) alternative SGP(s) that can serve traffic related to the affected SG(s) (i.e.: SGP(s) that are configured to serve such SG(s) that became unattended).

As such, the disclosure of *Roque* is not directed to "controlling the transmission of an acknowledgement of the failure message so that data messages pending on the association are received at that remote process before the acknowledgment of the failure message" and "initiating a traffic diversion to set up an alternate path between said first processing entity and said second processing entity for queued data messages," as recited in claim 1. Therefore, the rejection is improper in stating that *Roque* discloses the aforementioned features. See final Office Action, pages 5-6.

For example, *Roque* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an acknowledgment of a failure message. Further, *Sun* describes the delaying of an acknowledgement message to a client process until completion of a requested task is performed. See para. 0037. As such, *Sun* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an acknowledgment of a failure message. Therefore, the rejection is improper in stating that *Sun* discloses the aforementioned features. See final Office Action, pages 5-6. *Sun* simply discloses that a task is completed before acknowledgement of the task is transmitted. See para. 0037.

As a result, *Sun* individually or in combination with *Roque* fails to teach or suggest at least "controlling the transmission of an acknowledgement of the failure message so that data messages pending on the association are received at that remote process before the acknowledgment of the failure message" and "initiating a traffic

diversion to set up an alternate path between said first processing entity and said second processing entity for queued data messages," as recited in claim 1.

Therefore, claim 1 is patentable over *Roque* in view of *Sun*, and withdrawal of the rejection is respectfully requested. For at least the reasons given above, claim 1 is allowable over the cited art of record. Since claims 2-8 and 16-21 depend from and include the features of claim 1 and recite additional features, claims 2-8 and 16-21 are allowable as a matter of law over the cited art.

**D. Rejection of Claims 9-12 and 14-15 under 35 U.S.C. § 103**

Claims 9-12 and 14-15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* in view of *Sun* in further view of *Performance Technologies* ("Tutorial: Interworking Switched Circuit and Voice-over-IP Networks," August 22, 2001). Applicants respectfully traverse this rejection for at least the following reasons.

Independent claim 1 is allowable over *Roque* and *Sun*, as previously discussed. Further, *Performance Technologies* fails to remedy the deficiencies of *Roque* and *Sun* with respect to independent claim 1. Therefore, since claims 9-12 and 14-15 depend from and include the features of claim 1 and recite additional features, claims 9-12 and 14-15 are allowable as a matter of law over the cited art.

As an example, claim 9 describes that an alternative local process to the same remote process is provided when a pending message is determined to form part of a stateful transaction. Diversely, *Roque* describes that an alternative signaling gateway process is designated and does not disclose that an alternative local process may be

provided to a same remote process (e.g., signaling gateway process in accordance with the Examiner's construction of "remote process").

Reversal of the rejections is respectfully requested.

**E. Rejection of Claims 13 and 22-29 under 35 U.S.C. § 103**

Claims 13 and 22-29 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* in view of *Sun* in further view of *Performance Technologies* in further view of *Suzuki* (U.S. Patent Publication No. 2002/0156925 A1). Applicants respectfully traverse this rejection for at least the following reasons.

**1. Applicants' Claim 13**

Independent claim 1 is allowable over *Roque* and *Sun*, as previously discussed. Further, *Performance Technologies* and *Suzuki* fail to remedy the deficiencies of *Roque* in view of *Sun* with respect to independent claim 1. Therefore, since claim 13 depends from and includes the features of claim 1 and recites additional features, claim 13 is allowable as a matter of law over the cited art.

**2. Applicants' Claims 22-29**

As provided in independent claim 22, Applicants claim:

A method of recovering failure in a distributed signalling gateway maintaining a plurality of associations between signalling gateway processes of said distributed signalling gateway and application server processes of an application server, said method comprising the steps of:

- initiating a traffic diversion in response to a failure message to set up an alternate path between said signalling gateway processes and said application server processes in case of fault affecting an association;

- initiating a switch back to include a new association linking a signalling gateway process and an application server process;
- **according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes; and**
- **distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables.**

(Emphasis added).

Applicants respectfully submit that independent claim 22 is allowable for at least the reason that *Roque* in view of *Sun* in further view of *Performance Technologies* in further view of *Suzuki* does not disclose, teach, or suggest at least “according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes” and “distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables,” as emphasized above.

For example, *Roque* describes a process for an application server process (ASP) to manage a withdrawal of service by a signalling gateway process (SGP). In this process, an SGP may send a “set of messages that will convey SGP state maintenance and SGP traffic maintenance events . . . related to an SGP . . . to an ASP.” Para. 0201. The ASP may also send notifications related to a status of a Signalling Gateway (SG) (including SGPs for the SG) to the SGPs that serve the SG. See para. 0218. As such, the disclosure of *Roque* is not directed to routing data messages received by a signaling gateway to an application server. Rather, *Roque* describes that the status information for a SG is the basis used to route traffic from an ASP to a SG. See para. 0252.

Accordingly, *Roque* fails to teach or suggest "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as recited in claim 22. Therefore, the rejection is improper in stating that *Roque* discloses the aforementioned features. See final Office Action, page 12.

Further, *Sun* describes the delaying of an acknowledgement message to a client process until completion of a requested task is performed. See para. 0037. As such, *Sun* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an acknowledgment of a failure message. Therefore, *Sun* individually or in combination with *Roque* fails to teach or suggest at least "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as emphasized above," as recited in claim 22. Accordingly, *Sun* does not remedy the deficiencies of *Roque*.

Also, *Performance Technologies* describes the interworkings of a public switched telephone network and voice-over-Internet Protocol (VoIP) network. *Performance Technologies* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages

pending on the association are received at a remote process before an acknowledgment of a failure message. Therefore, *Performance Technologies* individually or in combination with *Roque* and *Sun* fails to teach or suggest at least "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as emphasized above," as recited in claim 22.

Further, *Suzuki* describes the registration of a gateway or an agent when one is added to a network and signaling that may occur between a signaling gateway and a call agent. *Suzuki* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an acknowledgment of a failure message. Therefore, *Suzuki* individually or in combination with *Roque*, *Sun*, and *Performance Technologies* fails to teach or suggest at least "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as emphasized above," as recited in claim 22.

Therefore, claim 22 is patentable over *Roque* in view of *Sun* in further view of *Performance Technologies* in further view of *Suzuki*, and reversal of the rejection is respectfully requested. Since claims 23-29 depend from and include the features of claim



22 and recite additional features, claims 23-29 are allowable as a matter of law over the cited art.

As an example, claim 23 describes "finding alternate path to forward subsequent stateless processing messages onto another application server process through another association or to forward subsequent stateful processing messages through an alternate signalling gateway process still associated with the same application server process." Diversely, *Roque* describes that an alternative signaling gateway process is designated and does not disclose that a different forwarding operations may be performed based on the stateless or stateful nature of processing messages. Accordingly, the subject matter of claim 23 is not taught by the cited art.

### **III. Conclusion**

In summary, it is Applicants' position that Applicants' claims are patentable over the applied cited art references and that the rejection of these claims should be overturned. Appellant therefore respectfully requests that the Board of Appeals overturn the Examiner's rejection and allow Applicants' pending claims.

Respectfully submitted,

By:

  
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**Claims Appendix under 37 C.F.R. § 41.37(c)(1)(viii)**

The following are the claims that are involved in this Appeal.

1. A method of controlling a local process that forms part of a first processing entity, said first processing entity maintaining a plurality of associations with a plurality of remote processes in a second processing entity, said method comprising the steps of:

- receiving a failure message from a remote process indicating a fault affecting an association linking the local process with that remote process;

- queuing data messages destined for that remote process;

- controlling the transmission of an acknowledgement of the failure message so that data messages pending on the association are received at that remote process before the acknowledgment of the failure message; and

- initiating a traffic diversion to set up an alternate path between said first processing entity and said second processing entity for queued data messages.

2. A method as claimed in claim 1 wherein the controlling comprises delaying the acknowledgment of the failure message.

3. A method as claimed in claim 2 wherein the delay is for a predeterminable time period.

4. A method as claimed in claim 2 wherein the delay is determined by transmission and acknowledgment of a heartbeat message.

5. A method as claimed in claim 1 wherein the controlling comprises sending the acknowledgement of the failure message on the data stream used for the data messages.

6. A method as claimed in claim 1 comprising testing the association to determine if the association is active and, if not, dropping messages queued for the association.

7. A method as claimed in claim 1 wherein the first processing entity maintains a plurality of associations between a plurality of local processes and a plurality of remote processes.

8. A method as claimed in claim 7 comprising informing other local processes of the fault so that such other local processes can avoid involving the failed association in traffic diversion procedures initiated by them.

9. A method as claimed in claim 7 or claim 8 comprising determining whether pending messages form part of a stateful transaction, and, if so, finding an alternative local process to provide an alternative path to the same remote process.

10. A method as claimed in claim 9 wherein the determining comprises determining whether the messages are TCAP messages.

11. A method as claimed in claim 7 or claim 8 comprising determining whether pending messages form part of a stateless transaction, and, if so, finding an alternative path through the same local association to another remote process.

12. A method as claimed in claim 11 wherein the determining comprises determining whether the messages are non TCAP messages.

13. A method as claimed in claim 1 wherein the traffic diversion comprises modifying routing tables.

14. A method as claimed in claim 1 wherein the first processing entity is a signalling gateway, the local processes being signalling gateway processes having a common point code or set of point codes.

15. A method as claimed in claim 1 wherein the second processing entity is an application server, the remote processes being application server processes having a common routing key.

16. A method as claimed in claim 15 wherein the message indicating the fault is an ASP\_INACTIVE or ASP\_DOWN message and the acknowledgement being respectively an ASP\_INACTIVE\_ACK message or an ASP\_DOWN\_ACK message.

17. A method as claimed in claim 1 further comprising the initiating of a switch back procedure to include a new association linking a local process with a remote process.

18. A method as claimed in claim 17 comprising informing other local processes of the new association so that such other local processes can begin involving the new association.

19. A method as claimed in claim 1 wherein the associations are SCTP associations.

20. A computer readable storage medium embedded with computer code for controlling a local process using a method as claimed in claim 1.

21. A signalling gateway comprising a plurality of local processes that are controlled using a computer program code as claimed in claim 20.

22. A method of recovering failure in a distributed signalling gateway maintaining a plurality of associations between signalling gateway processes of said distributed signalling gateway and application server processes of an application server, said method comprising the steps of:

- initiating a traffic diversion in response to a failure message to set up an alternate path between said signalling gateway processes and said application server processes in case of fault affecting an association;

- initiating a switch back to include a new association linking a signalling gateway process and an application server process;

- according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes; and

- distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables.

23. The method as claimed in claim 22 wherein said step of initiating a traffic diversion further comprising the steps of:

- starting a protection timer; queuing messages destined for the application server process of the failed association;

- informing other signalling gateway processes of the fault so that other signalling gateway processes can avoid involving the failed association in traffic diversion procedure initiated by them;

- controlling the transmission of an acknowledgement of the failure message so that data messages pending on the association are received at the application server process before the acknowledgement; and

- finding alternate path to forward subsequent stateless processing messages onto another application server process through another association or to forward subsequent stateful processing messages through an alternate signalling gateway process still associated with the same application server process.

24. The method as claimed in claim 23 wherein said step of finding alternate path to forward subsequent stateless or stateful processing messages further comprising the steps of:

- re-computing said routing tables for said application server if the traffic is carrying stateless processing messages, sending messages according to said newly updated routing tables if there are still entry left in said routing tables and continuing to process until no entry is left in said routing tables; and

- finding an active signalling gateway process to divert the traffic for said application service process if the traffic is carrying stateful processing message, and sending said stateful processing messages onto said signalling gateway process through said alternate path.

25. The method as claimed in any of claims 22 to 24 wherein said step of initiating a switch back to include a new association further comprises the steps of:

- starting a protection timer further to the reception of an association activation;
- queuing data messages destined to the application server process of the new association;

- controlling the transmission of an acknowledgement of the association activation so that all diverted data messages have been transmitted via a diversion path;

- informing other signalling gateway processes of said new association; and
- re-computing said routing tables.



26. The method as claimed in claim 22 wherein said signalling gateway is coupled to a signalling end point across a signalling system No. 7 network.

27. The method as claimed in claim 22 wherein each signalling gateway process of said signalling gateway is coupled to each application server process across an internet protocol network.

28. The method as claimed in claim 23 wherein said stateful and stateless processing messages are respectively TCAP and non-TCAP messages identified by transaction identification numbers.

29. The method as claimed in claim 22 wherein said routing tables used for distributing signalling messages from said plurality of signalling gateway processes to said plurality of application server processes are SLS routing tables.

**Evidence Appendix under 37 C.F.R. § 41.37(c)(1)(ix)**

There is no extrinsic evidence to be considered in this Appeal. Therefore, no evidence is presented in this Appendix.

**Related Proceedings Appendix under 37 C.F.R. § 41.37(c)(1)(x)**

There are no related proceedings to be considered in this Appeal. Therefore, no such proceedings are identified in this Appendix.